

CANCER EPIDEMIOLOGY

Instructors: Jennifer Beebe-Dimmer M.P.H, Ph.D and Kristen Purrington M.P.H., Ph.D.

Objective: This 2-credit course will serve to introduce graduate level students in public health and cancer biology to the principal concepts and methods used in cancer epidemiology. The course will review important measures of cancer burden (prevalence, incidence, mortality) by race and ethnicity in the United States and worldwide as well as the sources data for these estimates. Students will receive an introduction to cancer genetic epidemiology as well as the major causes of human cancer (tobacco, obesity, diet, alcohol, viral and bacterial agents and ultraviolet radiation). The course will focus on the most commonly diagnosed cancers among men and women in the U.S. (prostate, breast, lung, colon), however, special lectures will devote time to cover additional sites (hereditary cancer syndromes, chronic inflammation, ionizing radiation, exogenous hormone use). As part of the course curriculum, students will be required to review and provide critical appraisal of selected literature in innovative areas of cancer research.

Prerequisites: None. However, FPH 7240 “Introduction to Epidemiology” is strongly recommended by the instructor.

Criteria for student evaluation: There will be 2 written examinations (midterm (40%) and final (40%)), as well as an in-class, oral presentation (15%) reviewing an assigned journal article coinciding with the specific lecture material. The remaining 5% will be assigned based upon individual contribution to our in-class discussions.

Required Readings: Articles and lecture notes will be posted on Blackboard or distributed in class.

Location: Mid-Med Lofts (87 E. Canfield) 3rd floor Classrooms

Class (Day/Time): Wednesday/ 10am-12pm

Lecture Topics:

The Burden of Cancer

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| Week 1: (1/11) | Measuring the Progress against Cancer:
Review of Epidemiologic Concepts and Methods
Estimation of Cancer Incidence and Mortality Trends in the United States |
| Week 2: (1/18) | International Cancer Incidence Rates
Patterns of Cancer Incidence by Race and Ethnicity |

The Role of Cancer Registries
Cancer Migrant Studies

Cancer Genetics

Week 3: (1/25) Epidemiologic Investigations of Genetic Susceptibility
Familial Risk and Hereditary Cancer Syndromes

Week 4: (2/1) Molecular Epidemiologic Studies
Uses of Biomarkers in Epidemiologic Studies of Cancer

Causes of Human Cancer

Week 5: (2/8) Tobacco and Environmental Tobacco Exposure
Alcohol and Cancer
Guest Lecturer: Dr. Michele Cote Ph.D.

Week 6: (2/15) Pre-Malignant Lesions and Cancer Risk
Guest Lecturer: Andreana Holowatyj
Review for Midterm Examination

Week 7: (2/22) *Midterm Examination*

Week 8: (3/1) Environmental Carcinogens and Cancer
Ultraviolet Radiation and Skin Cancer

Week 9: (3/8) Infection, Chronic Inflammation and Cancer
Guest Lecturer: Dr. Ann Schwartz Ph.D.

NO CLASS 3/15 *Spring Break*

Week 10: (3/22) Nutrition and Cancer
Guest Lecturer: Dr. Cathryn Bock Ph.D.

Week 11: (3/29) Obesity and Cancer

Primary and Secondary Prevention Strategies

Week 12: (4/5) Socioeconomic Predictors of Cancer Risk and Mortality
Guest Lecturer: Theresa Hastert Ph.D.

Week 13: (4/12) Screening for Early Detection

Week 14: (4/19) Review for Final Exam

Week 15: (4/26) *Final Exam*